REMARKS

Applicants wish to thank the Examiner for the withdrawal of the rejections under 35 U.S.C. § 112, second paragraph, and the rejections under 35 U.S.C. § 102 (b) in view of the Pirrung et al. patent (U.S. Pat. No. 5,143,854) and the Heller et al patent (U.S. Pat. No. 5,605,662), and also for the withdrawal of the rejection under 35 U.S.C. § 102(e) in view of the Wagner et al. patent (U.S. Pat. No. 6,329,209).

I. Claim Status

Claims 1-68 and 73-130, 132, 133 and 136-139 have been withdrawn. Claim 69 has been amended to specify that the plurality of enzymes comprises an artificial enzyme variant of a naturally occurring enzyme, wherein the artificial enzyme variant exhibits enhanced stability relative to the natural enzyme. Support for this amendment can be found in original claim 122 and in the Specification at page 6, lines 24-25, page 15, lines 12-14, page 15, line 31 to page 16, line 2, page 18, lines 11-13, page 59, line 22 to page 60, line 4, and page 60, lines 13-14. Claim 138 have been amended to refer to a plurality of enzyme variants. Support for this amendment can be found in the Specification at page 9, lines 28-30 and page 20, lines 18-20. Claim 131 has been amended to refer to enzyme in the singular form and claim 142 has been amended to correct a grammatical error.

New independent claim 145 has been added which is similar to claim 69, but specifies that the plurality of enzymes comprises an artificial enzyme variant of a naturally occurring enzyme, wherein the artificial enzyme variant comprises a non-naturally occurring catalytic specificity. Support for this new claim can be found in original claim 69 and in the Specification at page 108, lines 29-32 (Example 4), page 6, lines 24-25, page 15, lines 12-14, page 15, line 31 to page 16, line 2, page 18, lines 11-13, and page 59, line 22 to page 60, line 4. New dependent claims 145-160 have been added which are similar to dependent claims 70-72, 131, 134, and 140-144. No new matter has been introduced by the subject amendments and new claims. Claims 69-72, 131, 134-135, and 140-160 are therefore pending. All of the pending claims are readable on the elected species.

II. Reconsideration of withdrawal of claims 136-139

Applicants respectfully request reconsideration of the Examiner's withdrawal of claims 136-139, which occurred after Applicants' election of Species. Applicants respectfully wish to point out that these claims are readable on the elected species of a plurality of enzymes comprising an enzyme having specificity for a metabolite. Applicants specified that these claims were readable on the elected species in their Species Election submission of April 7, 2005. Applicants, therefore, request that these claims be examined with the current pending claims.

III. Rejections under 35 U.S.C. § 102

A. Hale, et al. (*JACS*, 1989, 111:3482-3484)

Claims 69-72, 131, and 140-144 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Hale et al. This rejection is respectfully traversed.

Hale et al. do not describe element (b) of either amended independent claim 69 or new independent claim 145, i.e.,

"a plurality of enzymes immobilized on the solid support, wherein the plurality of enzymes comprises enzymes having different small molecule substrate specificities, and wherein the plurality of enzymes comprises an artificial enzyme variant of a naturally occurring enzyme, wherein the artificial enzyme variant exhibits enhanced stability relative to the natural enzyme"; and

"a plurality of enzymes immobilized on the solid support, wherein the plurality of enzymes comprises enzymes having different small molecule substrate specificities, and wherein the plurality of enzymes comprises an artificial enzyme variant of a naturally occurring enzyme, wherein the artificial enzyme variant comprises a non-naturally occurring catalytic specificity."

Hale et al. describe an electrode that has 10 mg of glucose oxidase mixed into it. See Hale et al., Figure 2 caption on page 3483 (left column). In other words, a single enzyme, not a plurality having different small molecule substrate specificities. Although the final Office Action refers to this reference as describing glucose oxidases, the Hale et al. reference refers only to a single glucose oxidase enzyme. Hale et al. also do not describe a plurality of enzymes comprising an artificial enzyme variant. Accordingly, the Hale et al. reference does not anticipate the pending claims and withdrawal of this rejection is respectfully requested.

B. Hu, et al. (*Analytical Sciences*, June 1999, 15(6), 585-588)

Claims 69-72, 131, and 140-143 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Hu, et al. This rejection is respectfully traversed.

Hu, et al. also fail to describe element (b) of claim 69 and new claim 145. Hu, et al. describe the use of glucose oxidase from *Aspergillus niger* on page 585, right column, first full paragraph. On page 586, left column, first full paragraph, Hu, et al. describe using 2.5 mg/ml of glucose oxidase in the preparation of the electrode, not glucose oxidases as the Office Action states. Hu et al. also do not describe a plurality of enzymes comprising an artificial enzyme variant. Therefore, the Hu, et al. reference does not anticipate the pending claims and withdrawal of this rejection is respectfully requested.

C. Barrett, et al. (U.S. Pat. No. 5,482,867)

Claims 69-72, 131, 134 and 140 stand rejected under 35 U.S.C. 102(b) as being allegedly anticipated by Barrett et al. This rejection is respectfully traversed.

Barrett et al. describe a method for immobilizing anti-ligands onto a matrix that can be used to screen for ligands that bind to the anti-ligands. Barrett et al. do not describe a plurality of enzymes comprising enzymes having different small molecule substrate specificities, nor a plurality of enzymes comprising an artificial enzyme variant. Accordingly, withdrawal of the rejection under § 102(b) in view of Barrett et al. is respectfully requested.

D. Keen (U.S. Pat. No. 6, 060,327)

Claims 69-72, 131, 134, 135, and 140-142 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by Keen. This rejection is respectfully traversed.

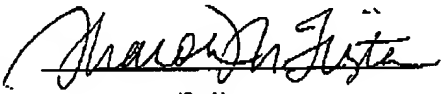
The Keen patent describes a sensor for sensing the presence of an analyte component that has a plurality of molecular recognition headgroups having affinity for the analyte component attached to a conductive polymer. The Keen patent does not describe a biosensor having a plurality of enzymes comprising an artificial enzyme variant of a naturally occurring enzyme that either exhibits enhanced stability (claim 69) or that comprises a non-naturally occurring catalytic specificity (claim 145). Accordingly, withdrawal of this rejection is respectfully requested.

CONCLUSION

In view of the amendments and remarks provided above, it is respectfully submitted that the pending claims are in condition for allowance and notification to that effect is respectfully requested. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set forth below. The Commissioner is hereby authorized to charge any deficiency in fees or credit any overpayment in connection with this submission to Deposit Account No. 50-0990.

Respectfully submitted,

December 9, 2005

By: 

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